STRONG CHILDREN'S RESEARCH CENTER

Summer 2018 Research Scholar

Name: Catherine X. Li

School: University of California, Berkeley School of Public Health

Mentor: Stephen Cook, MD, MPH

ABSTRACT

Title: PLANning for the Last Supper: An Assessment of Child Growth Trajectory Preceding Weight Loss Intervention

Background: The PLAN (Primary care pediatrics, Learning, Activity, Nutrition) study is a multicenter randomized control trial assessing the effectiveness of a family-based weight loss intervention in parent-child dyads, in a primary care setting. Little is known about the characteristics and weight trajectories of children and families that ultimately decide to participate in these types of interventions, and how their pre-baseline characteristics can impact their long-term outcomes of intervention. The "last supper effect" is an effect observed where individuals experience weight gain between enrollment into a weight loss intervention and the start of the intervention. Previous studies found that this effect is associated with binge eating disorder in adults. Furthermore, individuals in which the "last supper effect" is observed have been shown to have a lesser degree of weight loss during treatment and a harder time maintaining weight loss in the long term. However, very few studies have been conducted assessing this effect, its associated factors, and long-term weight loss outcomes, particularly in children.

Objective: To describe the baseline characteristics of families enrolled in the PLAN Study in Rochester, NY, to characterize the weight trajectories of children and siblings, and to assess the characteristics associated with a "last supper effect."

Methods: For children, siblings, and parents enrolled in the PLAN study in Rochester, NY, baseline weight and demographic data were collected through the PLAN study database. Additional height and weight data from the past two years was collected for children and siblings through electronic chart review. Child and sibling age, sex, weight, and height were used to calculate percent above the 95th BMI percentile using the CDC growth charts.

Results: Baseline data was collected for n = 38 children and n = 7 siblings, and electronic medical record data was collected for n = 21 children and n = 5 siblings in the PLAN study in Rochester, NY. There were differences in mean baseline child and parent weight between the control and intervention families (Child: $p = 0.012$, Parent: $p = 0.006$). The mean rate of growth in children was 0.24% per month in the period 1 to 2 years before baseline, 0.71% per month in the year before baseline, and -0.70% per month in the period preceding baseline. There were no statistically significant differences in the rate of growth in these periods at the $\alpha=0.05$ level, as assessed using paired t-tests. In bivariate analyses, there were no differences in the rate of growth in the period preceding baseline by parent BMI category, or child and parent socio-demographic characteristics.

Conclusion: There was no overall "last supper effect" observed in this study sample, possibly due to the small sample size, incomplete data collection, and data collection from just one center of a multicenter study. However, further research in this area is needed to characterize child growth trajectories and drivers of the "last supper effect" preceding enrollment in weight loss interventions. Particularly, examining additional psychological factors in parents and children is of interest. These findings will increase physician awareness of factors that could predict the long-term success of children and families in weight loss interventions.